UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
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JUL 28 1994

Ref: 8HWM-FF

Ms. Jessie Roberson
U.S. Department of Energy
Rocky Flats Office, Building 117
P.O Box 928
Golden, Colorado 80402-0928

ADMIN RECORD

**RE: Solvent Extraction Bench-Scale Treatability Study Work Plan**

Dear Ms. Roberson:

The purpose of this letter is to transmit our comments on the proposed referenced document. The attached comments identify several shortcomings with the document that are essential in nature. EPA as the lead regulatory agency for the Site-wide Treatability Study Plan (TSP), is hereby withholding approval of the work plan until the attached comments and those submitted by CDH under separate cover are addressed to our satisfaction.

If you have any questions or comments or wish to discuss ways to expedite the approval of the work plan, please contact Arturo Duran of my staff at 294-1080.

Sincerely,

Martin Hestmark, Manager
Rocky Flats Plant Project

Enclosures
cc: Norma Castañeda, DOE
Olga Erlich, EG&G
Gary Baughman, CDH
Dave Norbury, CDH
Arturo Duran, EPA

DOCUMENT CLASSIFICATION
REVIEW WAIVER PER
CLASSIFICATION OFFICE

## 1.0 INTRODUCTION

PRC Environmental Management, Inc. (PRC) has completed a technical review of the Draft Solvent Extraction Bench-Scale Treatability Study Work Plan. This report was prepared for the U.S. Department of Energy (DOE) by EG&G Rocky Flats (EG&G) in June 1994, and submitted for U.S. Environmental Protection Agency (EPA) review under terms of the Interagency Agreement (IAG). EPA requested this technical review under contract number 68-W9-0009, Technical Enforcement Support (TES 12) work assignment number C08061.

PRC's review focused on conformance with EPA guidance, internal consistency, and overall approach in evaluating the solvent extraction process.

This work plan describes bench-scale tests to be conducted on plutonium-, americium-, and uranium-contaminated soils from the Rocky Flats Plant (RFP). The test will evaluate the ability of triethylamine, in combination with various pretreatment steps, to remove these radioactive contaminants from RFP soil.

The following technical review comments are organized into Section 2.0, general comments pertaining to the document as a whole, and Section 3.0, specific comments that address individual deficiencies within the document.

## 2.0 GENERAL COMMENTS

1. In general, the treatability study work plan follows the suggested organization provided in EPA guidance (EPA 1992). However, most of the sections provide only the most basic information and do not adequately describe how the treatability test is to be conducted or results evaluated.

2. The treatability study has a number of objectives but does not provide a test matrix to show how they will be achieved. For example, in Phase I five tests are planned for each of two soil and one vegetation samples. The first test will use only the triethylamine, while the other four will evaluate several chemical pretreatments and several process operating parameters. Without a test matrix, these four tests will attempt to evaluate too many variables. Therefore, a test matrix and rationale for each test should be provided with the work plan.

3. The treatability study work plan discusses the evaluation of several pretreatment compounds as part of the treatability study. However, several oxidizing, reducing, and chelating compounds are already being evaluated in the Chemically Enhanced Steam Stripping of Radionuclides from RFP Soils treatability study. The rationale should be provided for repeating these experiments in this treatability study.

## 3.0 SPECIFIC COMMENTS

1. Section 4.1.1, Page 9, Second Paragraph. This paragraph discusses physical preparation of soil samples prior to testing and states that the less than one-quarter inch diameter material will be crushed and blended. Previous treatability studies on RFP soils have determined that radionuclide contamination is concentrated in the less than 4 millimeter diameter soils (Hicks and Blakeslee 1981). Therefore, the rationale for not concentrating the soil washing experiments on this size fraction should be included in this section.

2. Section 4.3, Page 10, Third Paragraph. This paragraph begins the section on experimental design and procedures. No standard operating procedures (SOPs) to conduct the treatability study are discussed. EPA guidance (EPA 1992) suggests that SOPs, with sufficient detail to be used by the laboratory technician, be provided in the work plan. These SOPs should be included in this section.

3. Section 5.0, Page 15, First Paragraph. This paragraph begins a section which lists equipment and materials for the treatability study. This section does not contain any description of the process to be used during the treatability study. EPA guidance (EPA 1992) suggests that illustrations of major pieces of equipment and some description of system operation be provided in this section. Therefore, this section should include additional information on the operation of equipment during the treatability study.

4. Section 7.0, Page 22, First Paragraph. This paragraph discusses data management. However, it does not provide any specific information on methods that will be used to evaluate the data. More specific information concerning methods to evaluate data should be included in this section.

## REFERENCES

U.S. Environmental Protection Agency (EPA). 1992. Guide for Conducting Treatability Studies under CERCLA. Office of Solid Waste and Emergency Response. Washington, DC. 20460 EPA/540/R-92/071a. October 1992.

Hicks, J.E., and J. J. Blakeslee. 1981. Soil Decontamination Process Development Closeout Report. AR05-15-20-1 AL. Rockwell International, Rocky Flats Plant, Golden, CO. September 1981.